p-Carbon RHIC Polarimeters Status Report

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for the CNI polarimetry group

March 22, 2013

p-Carbon Polarimeters Status

p-Carbon

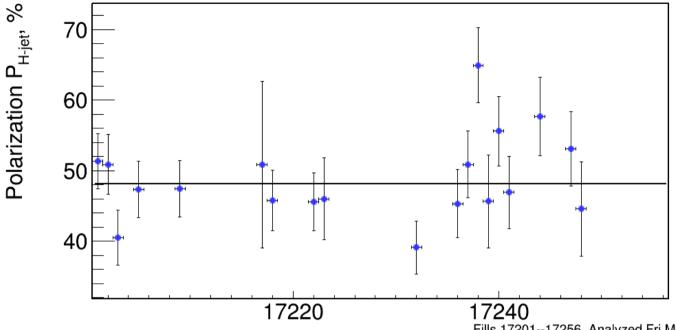
- Replaced all targets on Wednesday, March 20
- Only one target of 48 did not survive installation
- Stable running with minimal amount of noise
 - Monitoring empty bunches
- Some unstatistical bunch to bunch fluctuations in Blue
 - Investigating

H-Jet

- Investigating outliers, fill-to-fill fluctuations
- Primary suspect is difference in number of "+" and "-" bunches

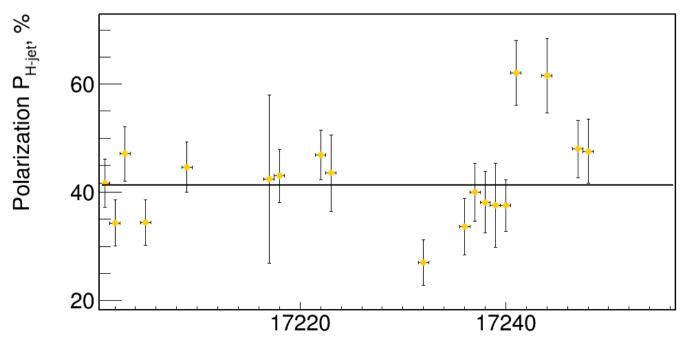
H-Jet Polarimeter

Fills 17201--17256, Analyzed Fri Mar 22 12:42:20 2013, Version 1920, dsmirnov



Entries	19
Mean	1.723e+04
RMS	16.04
Underflow	0
Overflow	0
Integral	929.3
χ² / ndf	28.75 / 18
Prob	0.05149
p0	48.14 ± 1.09

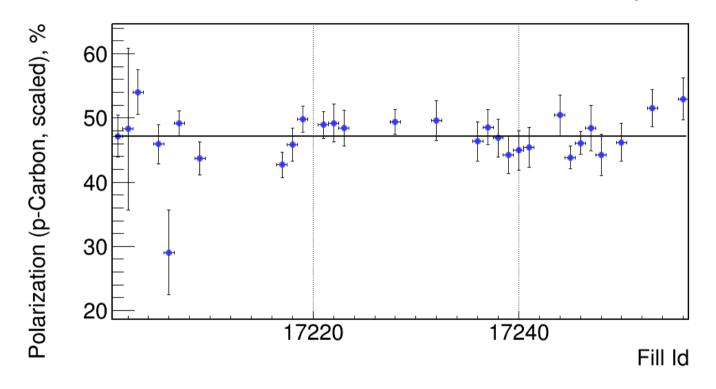
Fills 17201--17256, Analyzed Fri Mar 22 12:42:20 2013, Version 1920, dsmirnov



Entries	19
Mean	1.723e+04
RMS	16.14
Underflow	0
Overflow	0
Integral	811.1
χ² / ndf	47.02 / 18
Prob	0.0002102
p0	41.28 ± 1.20

B1 Polarimeter

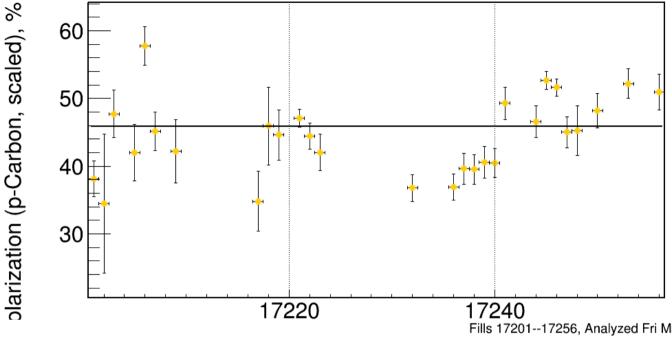
Fills 17201--17256, Analyzed Fri Mar 22 10:28:07 2013, Version 1920, dsmirnov



Entries	29
Mean	1.723e+04
RMS	17.1
Underflow	0
Overflow	0
Integral	1362
χ² / ndf	38.29 / 28
Prob	0.093
p0	47.18 ± 0.49
Overflow Integral χ² / ndf Prob	0 1362 38.29 / 28 0.093

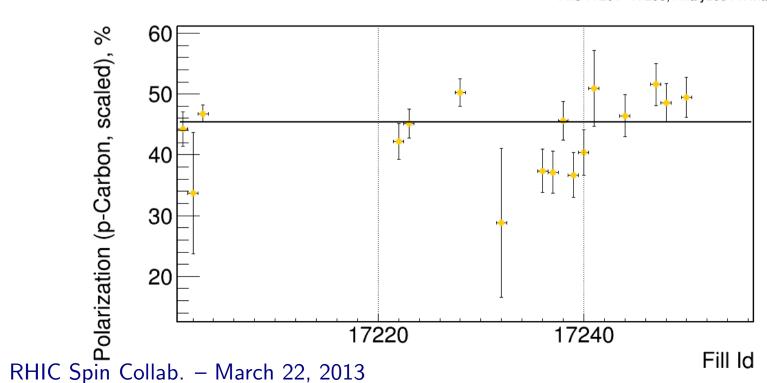
Y1 and Y2 Polarimeters

Fills 17201--17256, Analyzed Fri Mar 22 10:28:07 2013, Version 1920, dsmirnov



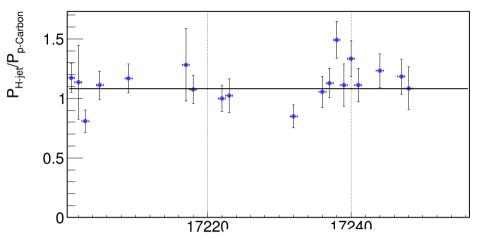
Entries	28
Mean	1.723e+04
RMS	17.6
Underflow	0
Overflow	0
Integral	1242
χ² / ndf	170.8 / 27
Prob	7.693e-23
p0	45.87 ± 0.43

Fills 17201--17256, Analyzed Fri Mar 22 10:28:07 2013, Version 1920, dsmirnov



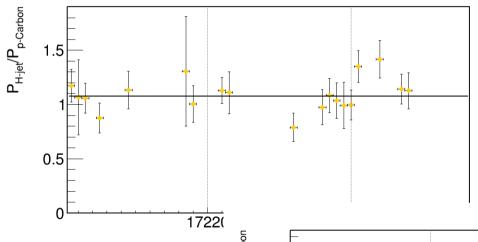
Entries	17
Mean	1.723e+04
RMS	15.61
Underflow	0
Overflow	0
Integral	735
χ² / ndf	34.68 / 16
Prob	0.004395
p0	45.37 ± 0.72

H-jet/p-Carbon Normalization Fills 17201--17256, Analyzed Fri Mar 22 12:42:20 2013, Version 1920, dsmirnov



Entries	912
Mean	1.723e+04
RMS	15.98
Underflow	0
Overflow	0
Integral	21.36
χ² / ndf	28.17 / 18
Prob	0.05952
p0	1.078 ± 0.031

Fills 17201--17256, Analyzed Fri Mar 22 12:42:20 2013, Version 1920, dsmirnov



Entries	539
Mean	1.723e+04
RMS	16.11
Underflow	0
Overflow	0
Integral	20.76
χ² / ndf	16.76 / 18
Prob	0.5394
p0	1.074 ± 0.037

Fills 17201--17256, Analyzed Fri Mar 22 12:42:20 2013, Version 1920, dsmirnov

Entries

Mean RMS Underflow Overflow

Integral χ^2 / ndf

Prob

1.723e+04 15.71

16.89 8.234 / 14

0.8768 1.109 ± 0.044

Ċ			Fills 1/2011/256,	Analyzed Fri Ma
$P_{H-jet}/P_{p-Carbon}$	1.5			
	0.5			
	-	17220	17240	E:II Id

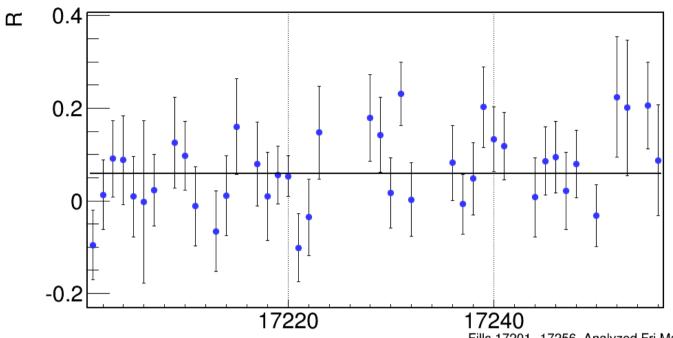
Fill Id

H-jet/p-Carbon Normalization

	Run 13, 255 GeV
B1U	1.08 ± 0.03
B2D	1.01 ± 0.10
Y2U	1.11 ± 0.04
Y1D	1.07 ± 0.04

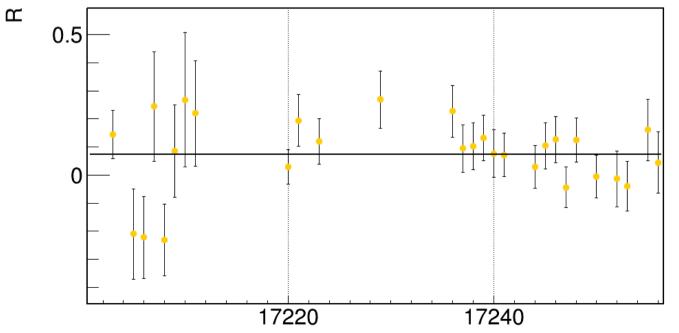
Profile Polarization R, 24 GeV

Fills 17201--17256, Analyzed Fri Mar 22 12:42:20 2013, Version 1920, dsmirnov



 $\begin{array}{ll} \chi^2 \, / \, ndf & 40.8 \, / \, 40 \\ \\ Prob & 0.4349 \\ p0 & 0.05935 \pm 0.01248 \end{array}$

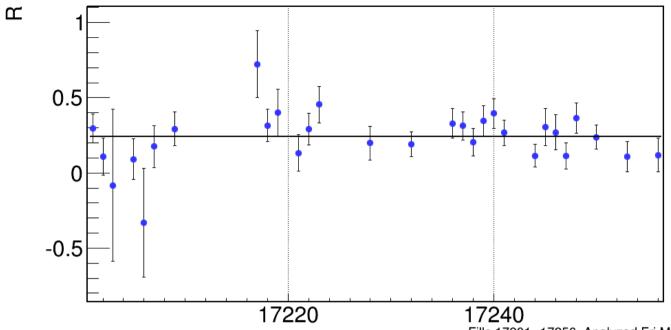
Fills 17201--17256, Analyzed Fri Mar 22 12:42:20 2013, Version 1920, dsmirnov



 $\begin{array}{c} \chi^2 \, / \, \text{ndf} & 33.36 \, / \, 27 \\ \\ \text{Prob} & 0.1855 \\ \\ \text{p0} & 0.07341 \pm 0.01754 \end{array}$

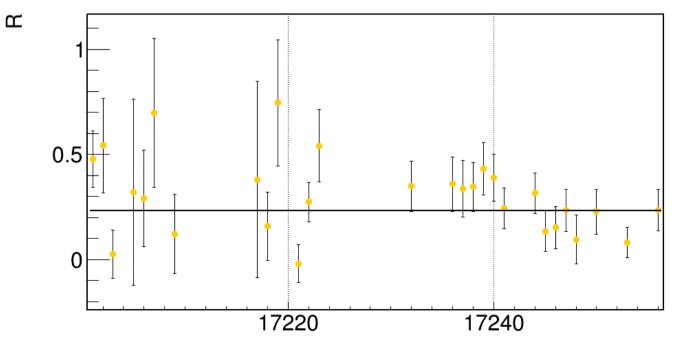
Profile Polarization R, 255 GeV

Fills 17201--17256, Analyzed Fri Mar 22 12:42:20 2013, Version 1920, dsmirnov



 χ^2 / ndf 31.79 / 28 Prob 0.2833 p0 0.2429 \pm 0.01989

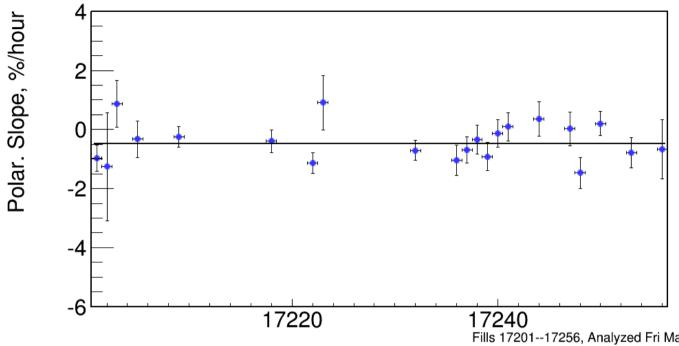
Fills 17201--17256, Analyzed Fri Mar 22 12:42:20 2013, Version 1920, dsmirnov



 $\begin{array}{lll} \chi^2 \, / \, \text{ndf} & 41.42 \, / \, 27 \\ \\ \text{Prob} & 0.03751 \\ \\ \text{p0} & 0.2328 \pm 0.02284 \end{array}$

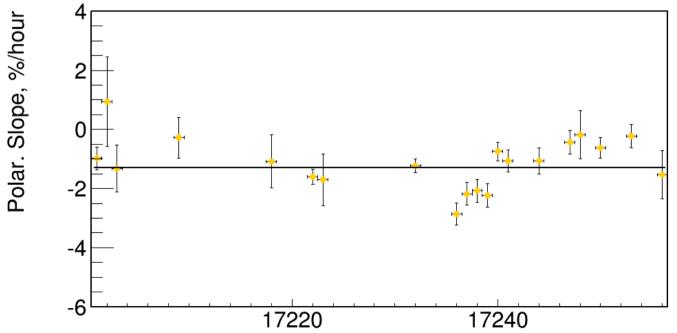
Polarization Decay, dP/dt

Fills 17201--17256, Analyzed Fri Mar 22 12:42:20 2013, Version 1920, dsmirnov



Entries	29
Mean	1.723e+04
RMS	18.34
Underflow	0
Overflow	0
Integral	-8.649
χ² / ndf	25.03 / 20
Prob	0.2002
p0	-0.4819 ± 0.1056

Fills 17201--17256, Analyzed Fri Mar 22 12:42:20 2013, Version 1920, dsmirnov



Entries	28
Mean	1.723e+04
RMS	12.76
Underflow	0
Overflow	0
Integral	-22.48
χ² / ndf	60.01 / 19
Prob	3.851e-06
p0	-1.295 ± 0.091

Polarization Decay, dP/dt vs Profile dR/dt

Fills 17201--17256, Analyzed Fri Mar 22 12:42:20 2013, Version 1920, dsmirnov

